

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Please cancel claims 1-23.

Please add new claims 24-26.

Listing of Claims:

1-23 (Canceled).

24 (New). A method for designing a core of golf ball having a specific coefficient of restitution, the method comprising:

determining a desired coefficient of restitution for a core of a golf ball, the desired coefficient of restitution equal to or greater than 0.783;

selecting a selected polybutadiene material from a plurality of polybutadiene materials, each of the plurality of polybutadiene materials having a distinct solution viscosity wherein a higher value of solution viscosity of the polybutadiene material corresponds to a higher coefficient of restitution for a core of a golf ball;

mixing the selected polybutadiene with a plurality of other components to create a polybutadiene mixture; and

forming a core for a golf ball from the polybutadiene mixture, the core having the desired coefficient of restitution.

25 (New). The method according to claim 24 wherein the plurality of polybutadiene materials comprises:

- a first polybutadiene material having a solution viscosity of 90;
- a second polybutadiene material having a solution viscosity of 100;
- a third polybutadiene material having a solution viscosity of 120; and
- a fourth polybutadiene material having a solution viscosity of 140.

26 (New). The method according to claim 24 wherein each of the plurality of polybutadiene materials has a Mooney viscosity ranging from 38 to 52.